

## REMARKS

In summary, claims 2, 7-9, 13, 15, 19, 21, 25, 27, 31, 33-35, and 38-78 are pending. Claims 2, 7-9, 25, 27, 31, 33-35, 38-44, and 63-78 are withdrawn from consideration. Claims 13, 19, 45, 52-54, 61, and 62 are rejected under 35 U.S.C. § 102. Claims 15, 21, 46-51, and 55-60 contain allowable subject matter but are objected to as being dependent upon a rejected base claim. Applicant respectfully traverses the rejection of claims 13, 19, 45, 52-54, 61, and 62. Claims 13 and 19 are herein amended. Claims 79-92 are newly added. No new matter is added.

### Telephone Conversation With Examiner

Applicant's representative thanks Examiner Vu for the telephone conversation conducted on January 1, 2006. During that conversation, Applicant's representative explained that he did not understand how Figure 2f of Birk *et al.* (cited in the instant Office Action) taught the limitations of Applicant's claimed invention. Specifically, Applicant's representative did not see how Birk *et al.* taught that the lamp output level would be reduced to an intermediate lamp light output level before being reduced to the low lamp light output level in accordance with a result of a comparison between a measured value of a lamp parameter with a threshold value of a lamp parameter.

Examiner Vu explained that Applicant's claims recite a low lamp light output level and an intermediate lamp light output level and that Figure 2f of Birk *et al.* shows a low lamp light output level and an intermediate lamp light output level. Applicant's representative then explained that Figure 2f was merely a depiction of fluctuation around a mean value of current, and did not represent predetermined values that were a result of a comparison with specific lamp parameters. Examiner Vu said he will look at Birk *et al.* more closely to see if it teaches reducing the lamp light output level to predetermined levels depending upon the result of comparison of lamp parameters.

Applicant's representative then asked Examiner Vu if he thought that including a portion of the preamble (*e.g.*, "stably dimming a lamp light output level of a gas discharge

lamp to a low lamp light output level without observable flicker”) of the independent claims in the body of the claims would make the claims allowable. Examiner Vu said he could not answer that question at the moment. He did say however, that because Birk *et al.* taught dimming a gas discharge lamp, that including a portion of the preamble into the body of the claim, only, would most likely not render the claims allowable.

Finally, Applicant’s representative stated that he did not think that Birk *et al.* disclosed or suggested a compact discharge lamp. Applicant’s representative said that it is his understanding that a compact discharge lamp is not merely a smaller version of a conventional discharge lamp, but rather the term “compact discharge lamp” is a term of art that, as described in the specification, refers to, among other things, a gas discharge lamp having one or more small radius bends that allow the tube to fold back on itself. Examiner Vu said that reading the claims broadly did not lead to that interpretation. Applicant’s representative said that he would amend the claims to include some structure of a compact discharge lamp as described in the specification.

### Overview

To aid the Examiner in better understanding Applicant’s claimed invention, a brief overview is provided herein. Applicant’s claimed invention provides a mechanism for dimming a gas discharge lamp to a low light output level without perceptible flicker. This is particularly applicable to gas discharge lamps operating at high temperatures. At high temperatures, the light tends to flicker when the lamp is suddenly reduced to a low light output level. In one embodiment, the gas discharge lamp is operated at an intermediate light output level prior to operating the gas discharge lamp at the low light output level. Because the lamp temperature does not change instantaneously, the lamp is operating at the intermediate light output level at a higher than rated temperature. However, no flicker is perceptible at the intermediate light output level at the higher temperature. Upon cooling, the gas discharge lamp is operated at the low light output level. Because the temperature is lower, the light does not flicker at the low light output level. Furthermore, no perceptible difference is noticed between dimming the lamp from its nominal light output level to the

intermediate light output level and dimming the lamp from its nominal light output level to the low light output level. Once the lamp has cooled to the threshold temperature, dimming the lamp from the intermediate light output level to the low light output level also is not perceptible. The overall result is a gas discharge lamp and ballast system that can be dimmed from its nominal light output level to a low light output level (*e.g.*, approximately 1% of its nominal level) with no perceivable flicker.

**Claim Rejections - 35 U.S.C. §102**

Claims 13, 19, 45, 52-54, 61, and 62 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,351,080, issued to Birk *et al.* (Birk *et al.*).

Birk *et al.* neither discloses nor suggests “comparing a measure signal indicative of a measured value of a lamp parameter with a threshold signal indicative of a threshold value of said lamp parameter,” and in accordance with the comparison, “reducing the lamp light output level to an intermediate lamp light output level and subsequently reducing the lamp light output level to the low lamp light output level” as recited in independent claims 45 and 54.

Birk *et al.* teaches a circuit arrangement for dimming a fluorescent lamp by switching on and off the supply voltage of the fluorescent lamp. (Abstract; column 1, lines 6-8, 26-32). The object of Birk *et al.* is to provide this capability with circuitry that is less complicated than prior art circuits. (Column 1, lines 6-36). Birk *et al.* teaches that a desired brightness of the fluorescent lamp is achieved by adjusting parameters of the circuitry to directly provide the desired brightness. Nowhere does Birk *et al.* disclose or suggest adjusting the circuitry to reduce the lamp light output level to an intermediate lamp light output level and subsequently reducing the lamp light output level to the low lamp light output level prior to achieving the desired brightness, in accordance with a comparison of a lamp parameter.

In the instant Office Action, Figure 2f of Birk *et al.* (reproduced herein) is cited as teaching “an intermediate lamp light output level.” Figure 2f is a depiction of a current,  $I_B$ , fluctuating about a mean value,  $I_M$ . “The current [ $I_B$ ] thus fluctuates about its mean value  $I_M$ ”

(FIG. 2f) ...” (Column 3, lines 55-56). Further, the current,  $I_B$ , depicted in Figure 2f is not the lamp light output current, but is a current that flows from the supply voltage to a resonant circuit. “During this time, the current  $I_B$  can flow from the supply voltage source  $+U_B$  into the resonant circuit.” (Column 3, lines 39-41). Thus, Figure 2f is not the lamp light output current, and the levels depicted

in Figure 2f are not lamp light output levels. Further, Figure 2f depicts fluctuations about a

mean value of current, not an

intermediate lamp light output level and a subsequently reduced lamp light output level resulting from a comparison of a measured value of a lamp parameter with a threshold value of the lamp parameter.

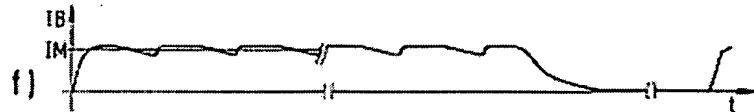


Fig. 2

With respect to claims 13 and 19, Birk *et al.* neither discloses nor suggests a “compact gas discharge lamp having at least one small radius allowing said compact gas discharge lamp to fold back on itself,” as recited in amended claims 13 and 19. Birk *et al.* discloses only a fluorescent lamp. As described in Applicant’s application, “[c]ompact gas discharge lamps differ from conventional gas discharge lamps in that they are constructed of smaller diameter tubing, typically having an outside diameter of less than about five-eighths of an inch. Also, the lamps are compact in part because the tubing has one or more small radius bends that allow the tube to fold back on itself in such a manner as to achieve a compact shape. Additionally, in compact gas discharge lamps wherein the tube is folded back on itself, the lamp ends typically are in close proximity to each other.” (Page 1-2, paragraph 0003). Nowhere does Birk *et al.* teach or suggest any of the above characteristics of a compact gas discharge lamp.

Because Birk *et al.* neither discloses nor suggests “comparing a measure signal indicative of a measured value of a lamp parameter with a threshold signal indicative of a threshold value of said lamp parameter,” and in accordance with the comparison, “reducing the lamp light output level to an intermediate lamp light output level and subsequently reducing the lamp light output level to the low lamp light output level,” and because Birk *et*

*al.* neither discloses nor suggests a “compact gas discharge lamp having at least one small radius allowing said compact gas discharge lamp to fold back on itself,” it is requested that the rejection of claims 13, 19, 45, 52-54, 61, and 62 under 35 U.S.C. § 102 be reconsidered and withdrawn.

**Allowable Subject Matter**

Claims 15, 21, 46-51, and 55-60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Newly added claims 79-82 represent claims 15, 21, 46-51, and 55-60 rewritten in allowable form. The table below indicates the newly added claim number and the original claims whose limitations it includes.

New Claim Number	Original Claim Number(s)
79	45 and 15
80	54 and 21
81	45 and 46
82	47 (Dependent Upon Claim 81)
83	45 and 48
84	49 (Dependent Upon Claim 83)
85	45 and 50
86	45 and 51
87	54 and 55
88	56 (Dependent Upon Claim 87)
89	54 and 57
90	58 (Dependent Upon Claim 89)
91	54 and 59

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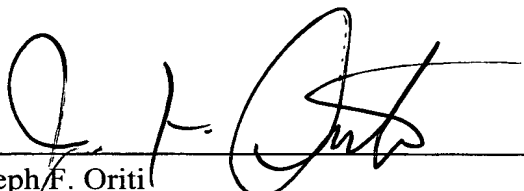
PATENT  
REPLY FILED UNDER EXPEDITED  
PROCEDURE PURSUANT TO  
37 CFR § 1.116

New Claim Number	Original Claim Number(s)
92	54 and 60

### CONCLUSION

In view of the foregoing arguments, remarks, and amendments, it is submitted that this application is in condition for allowance. Reconsideration of this application and an early Notice of Allowance are requested. In the event that the Examiner cannot allow this application for any reason, the Examiner is encouraged to contact the undersigned attorney to discuss resolution of any remaining issues.

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Joseph F. Oriti  
Registration No. 47,835

Woodcock Washburn LLP  
One Liberty Place - 46th Floor  
Philadelphia PA 19103  
Telephone: (215) 568-3100  
Facsimile: (215) 568-3439